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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT : Arnold Karel Jansen Van Doorn
SERIAL NO. : 09/706,667 EXAMINER : David C. Payne
FILED : November 6, 2000 ART UNIT : 2638
FOR : SYSTEM HAVING AN IMPULSE NOISE FILTER SYSTEM

APPEAL BRIEF TRANSMITTAL LETTER

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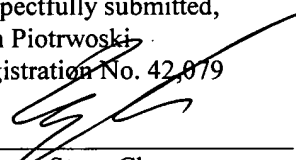
Dear Sir:

Appellants respectfully submit three copies of an Appeal Brief For Appellants that includes an Appendix with the pending claims. The Appeal Brief is now due on September 13, 2005.

Appellants enclose a check in the amount of \$500.00 covering the requisite Government Fee.

Should the Examiner deem that there are any issues which may be best resolved by telephone communication, kindly telephone Applicants undersigned representative at the number listed below.

Respectfully submitted,
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Registration No. 42,079

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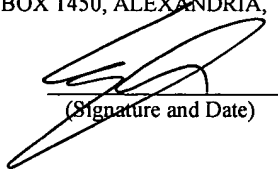
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(Signature and Date)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

In re the Application


Inventor : Arnold Karel Hansen Van Doorn
Application No. : 09/706,667
Filed : November 6, 2000
For : SYSTEM HAVING AN IMPULSE NOISE FILTER
MEANS

APPEAL BRIEF

On Appeal from Group Art Unit 2638

Dan Piotrowski
Registration No. 42,079

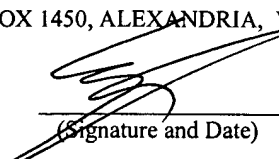
Date: September 16, 2005


By: Steve Cha
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Steve Cha, Reg. No. 44,069
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I. REAL PARTY IN INTEREST

The real party in interest is the assignee of the present application, U.S. Philips Corporation, and not the party named in the above caption.

II. RELATED APPEALS AND INTERFERENCES

With regard to identifying by number and filing date all other appeals or interferences known to Appellant which will directly effect or be directly affected by or have a bearing on the Board's decision in this appeal, Appellant is not aware of any such appeals or interferences.

III. STATUS OF CLAIMS

Claims 1, 3, 5, 6 and 7 have been presented for examination. All of these claims are pending, stand finally rejected, and form the subject matter of the present appeal.

IV. STATUS OF AMENDMENTS

In response to the patent application filed November 6, 2000 and accompanying Preliminary Amendment, containing claims 1-8, and assigned US Patent Application Serial No. 09/706,667, a first Office Action was mailed on October 6, 2003. Claims 1 and 7 were rejected under 35 USC §102(e) as being anticipated by Chen (USP no. 5,915,205) and claims 2, 3, 4 and 8 were rejected under 35 USC §103(a) as being unpatentable over Chen in view of McMullan (USP no. 5,142,690). On December 31, 2003, a response to the first Office Action was timely filed which presented arguments why the references cited failed to anticipate or render obvious the invention claimed.

Amendments were made to claims 1, 3, 4, 5, 6 and 7 to more clearly state the invention and to correct errors in form. Claims 2 and 8 were cancelled.

On March 18, 2005, a second and Final Office Action was entered which rejected claims 1, 3, 4, and 7 as being obvious over Chen in view of McMullan for the same reason as stated in the previous Office Action. Claims 5 and 6 were rejected under 35 USC §103(a) as being unpatentable over Chen and McMullan as applied to claim 4 and further in view of Izakson (USP no. 4, 207,543).

On June 9, 2004 a response to the second and Final Office action was timely filed that presented additional arguments as to why the claimed invention were not rendered obvious by the recited references. Amendments were made to claims 1 and 7. Claim 4 was cancelled. On July 14, 2004, a request for Continued Examination was made which requested that the amendments made in the response to the second and Final Office Action be considered.

An Advisory Action was mailed on July 26, 2004, which stated that the amendments made to the claims required a new searching. The Advisory Action failed to state whether the amendments made to the claims were entered or not for the purposes of an appeal.

On August 24, 2004, a non-final Office Action was entered in response to the RCE filed on July 14, 2005 which rejected claims 1, 3 and 7 under 35 USC §103(a) as being unpatentable over Chen in view of Williams (USP no. 6,151,559). Claims 5 and 6 were rejected under 35 USC 103(a) as being unpatentable over Chen in view of Williams and further in view of Izakson.

On November 24, 2004, a response to the Office Action was timely filed which presented arguments why the references cited failed to render obvious the claimed invention. No amendments were made to the claims.

On April 21, 2005, a Final Office Action was entered, which repeated the rejection of claims 1, 3 and 7 in view of the combination of Chen and Williams and claims 5 and 6 in view of the combination of Chen, Williams and Izakson.

On June 8, 2005, a response to the Final Office Action was timely filed, which again presented arguments as to why the cited references failed to render obvious the invention recited in the claims. Claims 1, 3, 5, 6 and 7 were amended to place the claims in a form consistent with U.S Patent Office practice. No new matter was added.

On June 23, 2005, an Advisory Action was entered which stated that consideration had been given to the amendments and arguments presented in the response filed on June 8, 2005 (and received on June 10, 2005) but they did not place the application in condition for allowance. The finality of the rejection was reasserted and stated that "[a]pplicant's assertion that the Chen filter does not teach an adaptive filter as claimed has been specifically addressed in col. 2 and 3 of the prior art. Furthermore, applicant argues limitations concerning filtering in band of the upstream signal is not part of the claim language as argued." The Advisory Action stated that for the purposes of appeal the amendments to the claims would be entered.

A Notice of Appeal, with appropriate fee, was filed on July 13, 2005. This Appeal Brief is being filed within two (2) months after the filing of the Notice of Appeal.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention describes a communication system which is less susceptible to noise interference, in particular impulse noise interference (see page 1, lines 26-29). The communication system is characterized in that it comprises a filter means coupled between the noise sources and at least one optical transmitter wherein the filter means has a cut-off frequency that is chosen in dependence on the noise frequency. (see page 2, lines 1-4). In one aspect of the invention, the filter means are arranged as high pass and/or low pass filters (see page 2, lines 17-20). Figure 1 of the instant application illustrates a system including a filter means that is preferably directly before the optical transmitters. The cut-off frequency of the illustrated high pass filter having characteristics shown in Figure 2 is chosen in dependence on the maximum expected noise frequency. This maximum noise frequency is in the range of 10 to 15 MHz. (see page 3, lines 30-34). In another aspect of the invention, the filter means is adaptive by means of a threshold detector which may be an amplitude or top detector in order to detect impulse noise in the low frequency range and a controllable switch having a control input coupled to the threshold detector. In this aspect of the invention, during the absence of impulse noise the switch allows the complete signal to pass. However, when the detection of impulse noise is detected, then a high pass filter filters the low frequency band below a known range (10 to 15 MHz). (see page 4, lines 5-14).

VI. GROUND FOR REJECTION TO BE REVIEWED ON APPEAL

The issues before this board are whether:

1. Claims 1, 3, and 7 are unpatentable under 35 USC §103(a) over the combination of Chen and Williams; and

2. Claims 5 and 6 are unpatentable under 35 USC §103(a) over the combination of Chen, Williams and Izakson.

VII. ARGUMENT

I. Rejection of Claims 1, 3, and 7 as being Unpatentable Under 35 USC §103(a) Over the Combination of Chen and Williams

Difference Between the Claimed Invention and the Cited References

The present invention describes a communication system that provides a filter means introduced before optical transmitters in the upstream path of a communication system to reduce or prevent the introduction of impulse noise into the optical transmitters. The filter means has a cut-off frequency dependent upon the noise frequency and enables substantially undisturbed communication above the cut-off frequency.

Chen discloses a cable television system employing a noise cancellation in order to reduce the radio frequency noise for upstream signals. The system employing noise cancellation at the headend includes an antenna at a central distribution point. The noise received by the antenna is correlated with noise on the upstream line for canceling or reducing the noise. (see ABSTRACT). More specifically, and with reference to Figure 3, which is referred to in rejecting the claims, Chen discloses receiving an upstream signal on line 208 and applying it to bandpass filter 310 and further receiving a noise signal on antenna 220 and applying the noise signal to bandpass filter 306. The filtered signals are applied to respective modulators, and the modulated signals are applied to E/O converter

302 for subsequent transmission to the headend. The signals are modulated at the carrier frequencies that prevent interference with one another. See col. 5, lines 30-55, which state in part, "Fig. 3 illustrates circuitry necessary ... to transmit the upstream and antenna signals to the headend ... The antenna is coupled to band pass filter 306 which filters out signals that are outside the band of interest for canceling the noise on the upstream signal. The output of band pass filter 306 is then coupled to modulator 304 which modulates the information on a suitable carrier so that it may be separately transmitted along the fiber optic cable 204 without interfering with the information provided by the upstream signals ... The upstream signals received ... coupled to band pass filter 310 which eliminates signals outside the pass band for upstream signals. The output of band pass filter 310 is passed to a modulator 308 which modulates the signal on a suitable carrier for transmission along fiber cable 204."

Chen further discloses that the headend separates the received upstream signal and the separately transmitted noise signal, and removes the noise signal from the upstream signal by a correlation process (see Fig. 4 and col. 5, line 56-col. 6, line 21).

Thus, Chen teaches a system having two paths, one for a noise signal bandlimited by a band pass filter to remove signals outside a band of interest and leaving the signal in the bandpass filter band intact, and a second for an upstream signal, including data and noise, bandlimited to remove signals outside "the pass band for upstream signals." Chen distinguishes the upstream signal as being in the band from "approximately 5-50 MHz" (see col. 1, lines 13-14) and "an antenna local to each of the subscribers receives radio frequency interference signals in the range of substantially 5-50 MHz. (see col. 3, lines 7-10). Accordingly, Chen teaches a bandpass filter that encompasses the upstream

frequency band (5-50MHz), which allows the upstream data, and associated noise, in the upstream frequency band to be transmitted and fails to disclose or suggest "a filter [having] a cut-off frequency, dependent on the noise frequency, wherein the adaptive filter blocks detected noise from passing upstream," as is recited in the claims.

Williams teaches a system for characterizing the nature and the severity of the impairments affecting a radio frequency signal path by providing a test signal to the path. "Testing is done by monitoring the output of an unused signal path with a filter and a totaling counter. The filter passes impairment energy from the signal path to the counter in a frequency band of interest. The band pass filter limits the ability of impairments of signals from other frequency bands to increase the counter's count value." (See ABSTRACT). Williams teaches, in Figure 1, a bi-directional cable system including a filter 116, which is referred to in rejecting the claims, in front of an optical transmitter (108 of Figure 1). Williams teaches that "downstream electrical signals are applied to a diplex filter 116 which allows a bi-directions signal flow on a same hard line coaxial cable 118. The diplex filter consists of a high-pass section 136 and a low-pass section 138. Upstream signals taken from the hard line coaxial cable pass through the diplex filter 116 into the upstream laser transmitter."

In the configuration shown in Figure 1, the diplex filter 116 is used to isolate high frequency downstream signals, in the range of 54 to 550 MHz (see col. 1, lines 33-34) from the lower frequency upstream signals, in the range of 5 to 30 MHz. (see col. 1, lines 49-50). Hence, Williams teaches a method for characterizing the nature and severity of impairments in a channel using a filter and counter. However Williams fails to teach or suggest "a cut-off frequency, dependent on the noise frequency, wherein the

adaptive filter blocks detected noise from passing upstream," as is recited in the claims. Rather Williams teaches isolating the upstream and downstream signals by appropriate filters with known bands.

**No Motivation Exists for the
Proposed Modification**

The law is clear that there must be some teaching in the references to support their use in the particular claimed combination. See *Smithkline Diagnostics, Inc., v. Helena Labs Corp.*, 859 F.2d 878, 887, 8 USPQ 2d 1468, 1475 (Fed. Cir. (1988).

Neither Chen nor Williams discloses a filter having a cut-off frequency dependent upon the noise frequency as is recited in the claims. Rather both Chen and Williams disclose using filters that encompass the entire upstream frequency band (5-50 MHz in the teachings of Chen and 5-30MHz in the teachings of Williams.)

With reference to the statements made in the Advisory action with regard to Chen describing adaptive filtering in cols. 2 and 3, a reading of this section reveals that Chen merely uses the term "adaptive filter." However, Chen fails to teach or suggest providing a "filter [having] a cut-off frequency, dependent on the noise frequency," as is recited in the claims. Rather Chen teaches a filter that has a known fixed bandwidth that encompasses essentially the entire upstream band.

Applicant respectfully submits, that contrary to the statements made in the Advisory Action, no reason has been shown in the Chen reference that would provide motivation to incorporate a filter [having] a cut-off frequency, dependent on the noise frequency. With regard to obviousness the courts have found "[t]he very ease with which the invention can be understood may prompt one to fall victim to the ... effect of a

hindsight syndrome wherein that which only the invention taught is used against its teacher.” *Iron Grip Barbell Company v. USA Sports, Inc.*, Docket no. 04-1149, Dec. 14, 2004, p. 4, (Fed.Cir. 2004), (quoting *In re Kotzab*, 217 F.3d 1365, 1369 (Fed. Cir. 2000). “Where an invention is contended to be obvious ... our cases require that there be a suggestion, motivation or teaching ... for such a combination.” *Id.* at 5 (quoting *In re Fine*, at 1074 (Fed. Cir. 1988). “This requirement prevents the use of ‘the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability -- the essence of hindsight.”” *Id.* (quoting *Ecolchem, Inc. v. So. Cal. Edison Co.*, 227 F.3d 1361, 1371-1372 (Fed. Cir. 2000), quoting *In re Dembiczak*, 175 F. 3d 994, 999 (Fed. Cir.1999)).

Applicant believes that the teachings of the instant application have been impermissibly used as a blueprint to modify Chen without any suggestion or reason for such modification. Chen teaches separating the received upstream signal and a separately transmitted noise signal and removing the noise signal from the upstream signal by a correlation process. Chen fails to teach a filter having a cut-off frequency dependent upon the noise frequency, as is recited in the claims.

In view of the above, applicant submits that the independent claim 1 is patentable over the teachings of the cited reference.

With regard to the remaining claims, these claims depend from the independent claim and are also not rendered obvious by the combination of Chen and Williams by virtue of their dependency upon an allowable base claims.

**The Proposed Modification of Chen
Fails to Arrive at the Present Invention**

To establish a prima facie case of obviousness of a claimed invention, all the claim limitations must be taught or suggested in the prior art. See *In re Royka*, 490 F. 2d 981, 180 USPQ 580 (CCPA 1975). The proposed modification of Chen fails to establish a prima facie case of obviousness because, even if there were some motivation to develop the feature suggested, all of the claim elements are not taught or suggested by the combination of the teachings of the cited references. Rather, the proposed modification fails to teach a filter having a cut-off frequency dependent upon the noise frequency, as is recited in the independent claim, as both Chen and Williams are silent with regard to this claim element.

Accordingly, the combination of Chen and Williams cannot be said to render obvious the invention recited in the independent claims, as both references fail to recite or suggest an element recited in the independent claims

In view of the above, applicant submits that the independent claim 1 is patentable over the teachings of the cited reference.

With regard to the remaining claims, these claims depend from the independent claim and are not rendered obvious by the combination of Chen and Williams by virtue of their dependency upon an allowable base claims.

**II. Rejection of Claims 5 and 6 as being Unpatentable Under 35 USC §103(a)
in view of Chen, Williams and Izakson.**

Claim 5 and 6 depend from independent claim 1, which has been shown to include subject matter not disclosed by, and hence, allowable over the teachings of the combination of Chen, and Williams. Applicant respectfully submits that claims 5 and 6

are allowable at least for their dependence upon an allowable base claim, without even contemplating the merits of the dependent claims. "[I]f an independent claim is non-obvious under 35 USC §103(a), then any claim depending therefore is non-obvious." *In re Fine*, 837 F.2d 1071, 5 USPQ 2d 1596 (Fed. Cir. 1988).

In view of the above, applicant submits that all of the claims are patentable over the teachings of the cited reference.


VIII. CONCLUSION

In view of the law and facts stated herein, it is respectfully submitted that the teachings of the cited references fail to render obvious the claimed invention and the burden of showing that the combination of the cited references teaches or suggests all of the features, expressly or inherently, recited in the claims has not been met. Applicant respectfully requests this honorable board reverse the rejection of the claims.

Respectfully submitted,

Dan Piotrowski
Registration No. 42,079

Date: September 16, 2005


By: Steve Cha
Attorney for Applicant
Registration No. 44,069

IX. CLAIMS APPENDIX

The claims which are the subject of this appeal are as follows:

1. A communication system, comprising:

a network, one or more optical transmitters and that may be subjected to potential noise sources, wherein the communication system includes an adaptive filter coupled between the potential noise sources and the at least one optical transmitter, which filter has a cut-off frequency, dependent on the noise frequency, and a noise detector, wherein the adaptive filter (1) blocks detected impulse noise from passing upstream through the communication system, (2) enables prevention of clipping of the optical transmitter and (3) enables substantially undisturbed upstream communication above the cut-off frequency of the filter.

2. (Cancelled).

3. The communication system according to claim 1, wherein the filter is arranged as a high pass filter and/or a low pass filter.

4. (Cancelled).

5. The communication system according to claim 1, further comprising:

a threshold detector and a controllable switch having a control input coupled to the threshold detector.

6. The communication system according to claim 5, further comprising:
a summing device for summing at least one filtered version of an impulse noise containing RF signal.
7. The communication system according to claim 1, wherein the filter has a cut-off frequency in the range of 10 to 15 MHz.
8. (Cancelled).